AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (currently amended) A method for managing radio frequency (RF) transmissions from an RF system of at least one mobile platform operating within a predetermined coverage region to a space-based transponder orbiting within said coverage region, in a manner to maintain a signal-to-noise ratio (Eb/No) of said RF transmissions within a predetermined range, the method comprising the steps of:

using a first control loop to monitor, by a central controller, a signal-to-noise ratio of said RF transmissions from said mobile platform that are received by said satellite transponder, and to transmit first power correction commands to said mobile platform via said satellite transponder for maintaining said signal-to-noise ratio of said RF transmissions from said mobile platform to within a predetermined range; and

using a second control loop including a mobile system of said mobile platform to monitor and further adjust a power level of said RF transmissions from said mobile platform to said satellite transponder, inbetween receipt of said commands from said central controller, by transmitting second power correction commands to said mobile platform, to ~~thereby~~ maintain said power level of said RF transmissions from said mobile platform at a ~~previously commanded~~ level previously commanded by said first power correction commands, inbetween receipt of updated power correction command signals from said central controller.

2. (original) The method of claim 1, wherein said predetermined signal-to-noise range comprises a range of about 1dB.

3. (original) The method of claim 1, wherein said predetermined signal-to-noise range is above a threshold signal-to-noise ratio of said central controller.

4. (original) The method of claim 1, further comprising the step of using said central controller to determine if said RF transmission from said mobile platform remains outside of said predetermined signal-to-noise ratio for more than about one second and, if so, commanding the mobile platform to cease said RF transmissions.

5. (original) The method of claim 1, wherein the step of monitoring by a central controller comprises monitoring by a ground-based central controller located within said coverage region.

6. (currently amended) A method for managing radio frequency (RF) transmissions from an RF system of at least one mobile platform operating within a predetermined coverage region to a space-based transponder orbiting within said coverage region, in a manner to maintain a signal-to-noise ratio (Eb/No) of said RF transmissions within a predetermined range, the method comprising the steps of:

using a first control loop to monitor and adjust a power level of said RF transmissions from said mobile platform to said space-based transponder to maintain same within said predetermined range, said first control loop including the steps of:

receiving said RF transmissions relayed from said space-based transponder at a central controller;

using said central controller to determine a signal-to-noise ratio of said RF transmissions received by said satellite transponder;

comparing said determined signal-to-noise ratio with predetermined signal-to-noise values representing said predetermined range; and

transmitting commands representing changes in said signal-to-noise ratio from said central controller to said space-based transponder, and from said space-based transponder to said mobile platform, to thereby command said mobile platform to adjust a power level of its said RF transmissions, in real time, to maintain said signal-to-noise ratio of said RF transmissions, from said mobile platform to said space-based transponder, within said predetermined range, at a receiver of said space-based transponder.

7. (previously presented) The method of claim 6, further comprising using a second control loop between said mobile platform and said satellite transponder to monitor and maintain said signal-to-noise ratio at a previously commanded level, said second control loop including the steps of:

monitoring said signal-to-noise ratio of said RF transmissions between said mobile platform and said satellite transponder; and

in between receipt of said commands from said central controller, adjusting said power level of said RF transmissions to maintain said power level at said previously commanded level determined by said central controller.

8. (currently amended) A method of determining a power spectral density (PSD) of an RF signal from a mobile platform having an RF transmitter/receiver directed at a space-based transponder, said method comprising the steps of:

using a central controller to receive and determine a signal-to-noise ratio of said RF signal transponded from said space-based transponder;

assuming that said signal-to-noise ratio of said RF signal received by said central controller is approximately identical to a signal-to-noise ratio of a RF signal at an output of said space-based transponder;

determining an effective isotropic radiated power (EIRP) value of an RF signal directed at a receiver of said space-based transponder by said mobile platform, as a function of said signal-to-noise ratio of said RF signal received by said central controller, and denoting said EIRP value as a target EIRP;

using said target EIRP and a signal pattern of an antenna of said mobile platform to determine an actual EIRP of said RF signal reaching a GEO arc within which said space-based transponder resides; and

using said actual EIRP reaching said GEO arc to determine said PSD of said RF signal being transmitted by said mobile platform.

9. (original) A system for monitoring and controlling a power spectral density of an RF signal from a mobile platform having an RF transmitter/receiver directed at a space-based transponder, the system comprising:

a scan angle compensator system for monitoring a power level of a signal transmitted from said RF transmitter/receiver of said mobile platform, wherein said

power level varies due to changes in an attitude of said mobile platform, and for adjusting said power level of said signal transmitted from said RF transmitter to minimize fluctuations of said power level when said signal is received by said space-based transponder.

10. (previously presented) The system of claim 9, wherein said system comprises an open loop system which compares antenna pointing information generated by an onboard reference system with information contained in a prestored table, and modifies said power level of said signal in accordance with said information contained in said prestored table.

11. (previously presented) The system of claim 9, further comprising a ground loop controller for measuring a signal quality of said signal when said signal is received from said satellite transponder at a ground station, and for generating a power correction command signal that is transmitted back to the mobile platform via said space-based transponder.

12. (original) The system of claim 11, wherein said ground loop controller comprises a closed loop system.

13. (original) The system of claim 11, wherein said ground loop controller only transmits said power correction command signals when a signal quality value of said signal differs from a desired predetermined value by a predetermined amount.

14. (original) The system of claim 11, wherein said power correction command signal represents an increment value by which said power level of said signal is to be modified.

15. (amended) A system for monitoring and controlling a power spectral density of an RF signal from a mobile platform having an RF transmitter/receiver directed at a space-based transponder, the system comprising:

a ground loop controller for measuring a signal quality of said RF signal when said signal is received from said space-based transponder at a ground station, and for generating a power correction command signal that is transmitted back to the mobile platform via said space-based transponder, to thereby maintain said power spectral density of said RF signal being transmitted by said mobile platform, as experienced at a geosynchronous arc within which said space-based transponder resides, within a predetermined limit.

16. (previously presented) The system of claim 15, wherein said ground loop controller comprises a closed loop system that compares a signal quality of said signal received at said ground station to a predetermined value and generates said power correction command based on a difference in signal quality between said signal received and said predetermined value.

17. (original) The system of claim 15, further comprising:

a scan angle compensator system for monitoring a power level of a signal transmitted from said RF transmitter/receiver of said mobile platform, wherein said power level varies due to changes in an attitude of said mobile platform, and for adjusting said power level of said signal transmitted from said RF transmitter to minimize fluctuations said power level when said signal is received by said space-based transponder.

18. (original) The system of claim 17, wherein said scan angle compensator comprises an open loop system which compares attitude information generated by an onboard inertial reference system with information contained in a prestored table, and modifies said power level of said signal in accordance with said information contained in said prestored stable.

19. (previously presented) A method for determining a power spectral density (PSD) of a radio frequency (RF) signal from a mobile platform having an RF transmitter/receiver directed at a space-based signal relaying device, said method comprising the steps of :

using a central controller to determine an approximate signal-to-noise ratio of an RF signal relayed by said spaced-based transponder from said mobile platform;

using said approximate signal-to-noise ratio to extrapolate an effective isotropic radiated power (EIRP) value of said RF signal when said RF signal was radiated from said mobile platform RF transmitter/receiver; and

using said EIRP value to estimate an actual EIRP of said RF signal received by said space-based transponder.

20. (previously presented) The method of claim 19, further comprising:

using information concerning a pointing direction of an antenna of said mobile platform radiating said RF signal in estimating said actual EIRP.

21. (amended) A method for managing radio frequency (RF) transmissions from an RF system of at least one mobile platform operating within a predetermined coverage region to a space-based ~~transponder~~ signal relaying device orbiting within said coverage region, in a manner to maintain a signal-to-noise ratio (Eb/No) of said RF transmissions within a predetermined range, the method comprising:

forming a first control loop to enable a controller to monitor and determine power level correction commands for commanding said mobile platform to adjust a power level of said RF transmissions transmitted from an antenna of said mobile platform, to thereby maintain a power spectral density (PSD) of said RF transmissions, as experienced by a receiver of said space-based signal relay device, within a predetermined limit; and

forming a second control loop between said space-based signal relaying device and said mobile platform for further enabling changes to said power level of said RF transmissions from said antenna of said mobile platform to further ensure said PSD of said RF transmissions does not exceed said predetermined limit.

22. (previously presented) The method of claim 21, wherein forming said first control loop comprises:

using said controller to receive said RF transmissions: and

comparing said signal-to-noise ratio of said received RF transmissions with predetermined, reference signal-to-noise ratios and using said comparison to generate commands sent by said controller to said space-based transponder to extrapolate said PSD of said RF signal transmitted from said antenna from said signal-to-noise ratio of said RF transmissions.

23. (previously presented) The method of claim 21, wherein said second control loop enables said mobile platform to make changes to a power level of signals

transmitted from said mobile platform in between receipt of said power level correction commands from said central controller.

24. (amended) A method for managing radio frequency (RF) transmissions from an RF system of at least one mobile platform operating within a predetermined coverage region to a space-based transponder orbiting within said coverage region, in a manner to maintain a signal-to-noise ratio (Eb/No) of said RF transmissions within a predetermined range, the method comprising:

using a controller to form a first power level control loop for monitoring a power level of RF signals relayed by said space-based transponder, from said mobile platform, to said controller, for controlling a power level of said RF signals being transmitted by said mobile platform;

using said controller to generate first power level commands and transmitting said first power level commands to said space-based transponder for subsequent relay back to said mobile platform, for enabling said power level of said RF signals to be adjusted by said mobile platform; and

forming a second power level control loop between said mobile platform and said space-based transponder, wherein said mobile platform is able to implement second power level commands to said RF signals being transmitted from its said RF system independently of, and in between, said receipt of said first power level commands from said controller, to further control said power level of said RF signals being transmitted by said mobile platform.

25. (previously presented) The method of claim 24, wherein said controller further monitors an aggregate power spectral density (PSD) of signals received from a

plurality of said mobile platforms operating within said predetermined coverage region to ensure that said aggregate PSD does not exceed a predetermined maximum value

26. (cancelled)

27. (amended) A method for managing radio frequency (RF) transmissions from an RF system of at least one mobile platform operating within a predetermined coverage region to a space-based transponder orbiting within said coverage region, in a manner to maintain a signal-to-noise ratio (Eb/No) of said RF transmissions within a predetermined range, the method comprising:

using a controller to form a first power level control loop for monitoring a power level of said RF transmissions being relayed by said space-based transponder from said mobile platform to said controller;

using said controller to generate first power level commands and transmitting said first power level commands to said space-based transponder for subsequent relay back to said mobile platform for use by said mobile platform in adjusting a power level of said RF signals; and

forming a second power level control loop between said mobile platform and said space-based transponder, independent of said first power level control loop, for enabling said mobile platform to monitor a power level of said RF transmissions transmitted from said mobile platform.

28. (cancelled)

29. (cancelled)